



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,356	07/17/2003	Pierre Sillard	Q76559	8909
7590	11/16/2004		EXAMINER	
SUGHRUE MION, PLLC Suite 800 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213			SONG, SARAH U	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,356	SILLARD ET AL.	
	Examiner Sarah Song	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 22 is/are rejected.
- 7) Claim(s) 1-21 and 23 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 July 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>0703</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on July 17, 2003 have all been considered and made of record (note the attached copy of form PTO-1449).

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: in line 20 of the abstract and line 14 of page 3 of the specification, "ps/nm.km" should be changed to – ps/nm².km—for the dispersion slope.

Appropriate correction is required.

Claim Objections

5. Claims 1-23 are objected to because of the following informalities: line 19 of claim 1, “ps/nm.km” should be changed to –ps/nm².km—for the dispersion slope. Claims 2-23 inherit the same objection as depending from claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 22 recites the broad recitation of a polarization

mode dispersion less than or equal to $0.2 \text{ ps/km}^{1/2}$, and then recites less than or equal to $0.1 \text{ ps/km}^{1/2}$ and also less than or equal to $0.05 \text{ ps/km}^{1/2}$ both of which are the narrower statement of the range/limitation.

Allowable Subject Matter

9. Claim 1-21 and 23 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.

10. Claim 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or reasonably suggest, either alone or in combination, all the limitations of claim 1.

12. Tanaka et al. discloses a dispersion-managed optical fiber comprising a fiber including positive chromatic dispersion optical fiber portions (T+) 11 alternating longitudinally with negative chromatic dispersion optical fiber portions (T-) 12, the fiber comprising in succession from the center towards the periphery a core having a varying index profile (Figure 6) and then a cladding, each positive chromatic dispersion optical fiber portion (T+) having at a wavelength of 1550 nm a chromatic dispersion whose absolute value is from 1 ps/nm.km to 10 ps/nm.km, a chromatic dispersion slope whose absolute value is less than $0.015 \text{ ps/nm}^2 \cdot \text{km}$, and an effective area greater than $35 \mu\text{m}^2$.

13. The negative chromatic dispersion optical fiber portion (T-) having at a wavelength of 1550 nm a chromatic dispersion whose absolute value is from 1 ps/nm.km to 10 ps/nm.km, a

chromatic dispersion slope whose absolute value is equal to (i.e. not less than) $0.015 \text{ ps/nm}^2 \cdot \text{km}$, and an effective area greater than $35 \mu\text{m}^2$.

14. However, the relative effective area difference at a wavelength of 1550 nm between the positive chromatic dispersion optical fiber portions (T+) and the negative chromatic dispersion optical fiber portions is greater than 7%, and bending losses at a wavelength of 1625 nm for 100 turns with a diameter of 60 mm are not disclosed.

15. Furthermore, the cladding disclosed by Tanaka et al. for Sample 2 does not have a constant index (see Figure 6, Figure 19, column 18, lines 29-32).

16. The modifications to provide a constant index cladding, a chromatic dispersion slope for the negative portion within the claimed range, the relative effective area difference, and the bending loss as claimed are not suggested by the prior art of record and are therefore not rendered obvious.

17. Therefore, Tanaka et al. does not disclose or reasonably suggest all of the limitations of claim 1. Therefore, Claim 1 would be allowable over the Tanaka et al.

18. Claims 2-23 would be allowable as depending therefrom.

19. Tirloni, Berkey et al., Tirloni et al., Lee et al.; Liu also disclose dispersion managed fibers having alternating positive chromatic dispersion portions and negative chromatic dispersion portions, but do not disclose or reasonably suggest at least the dispersion slope less than $0.015 \text{ ps/nm}^2 \cdot \text{km}$.

20. Therefore, the claims would be allowable over the prior art of record.

Conclusion

21. This application is in condition for allowance except for the following formal matters:

See objections to Abstract, Specification, Claim 1 and Claim 22 above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sarah Song
Patent Examiner
Group Art Unit 2874